

WHAT IS CLAIMED IS:

1. A resonator filter assembly, comprising:
 - a first triple-mode mono-block resonator;
 - a second triple-mode mono-block resonator; and
 - at least one block resonator coupled to at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.
2. The resonator filter assembly according to claim 1, wherein said at least one block resonator is disposed between said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.
3. The resonator filter assembly according to claim 1, wherein said at least one block resonator comprises a metallic coaxial resonator.
4. The resonator filter assembly according to claim 3, wherein at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator is formed of ceramic.
5. The resonator filter assembly according to claim 1, wherein said at least one block resonator is coupled to only one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.
6. The resonator filter assembly according to claim 1, wherein said at least one block resonator is coupled to at least one of said first triple-mode mono block resonator and said second triple-mode mono-block resonator via an aperture.

7. The resonator filter assembly according to claim 1, wherein said first triple-mode mono-block resonator and said second triple-mode mono-block resonator each comprises a metal plated dielectric block.

8. The resonator filter assembly according to claim 1, wherein said at least one block resonator comprises a first resonator and a second resonator.

9. The resonator filter assembly according to claim 8, wherein the first resonator and the second resonator comprise coaxial metallic resonators.

10. The resonator filter assembly according to claim 8, wherein the first resonator and the second resonator are coupled to one another, and
wherein the first resonator and the second resonator are disposed between said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.

11. The resonator filter assembly according to claim 8, wherein the first resonator is coupled to said first triple-mode mono-block resonator and the second resonator is coupled to said second triple-mode mono-block resonator, wherein said first triple-mode mono-block resonator and said second triple-mode mono-block resonator are coupled to one another.

12. The resonator filter assembly according to claim 8, wherein said at least one block resonator is coupled to at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator via an aperture.

13. A method of increasing a number of poles in a resonator filter assembly comprising:

providing a first triple-mode mono-block resonator;

providing a second triple-mode mono-block resonator; and

coupling at least one block resonator to at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.

14. The method according to claim 13, wherein said at least one block resonator is disposed between said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.

15. The method according to claim 13, wherein said at least one block resonator comprises a metallic coaxial resonator.

16. The method according to claim 15, wherein at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator is formed of ceramic.

17. The method according to claim 13, wherein said first triple-mode mono-block resonator and said second triple-mode mono-block resonator each comprise a metal plated dielectric block.

18. The method according to claim 13, wherein said at least one block resonator is coupled to at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator via an aperture.

19. The method according to claim 13, wherein said at least one block resonator is coupled to only one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.

20. The method according to claim 13, wherein said at least one block resonator comprises a first resonator and a second resonator.

21. The method according to claim 20, wherein the first resonator and second resonator comprise metallic coaxial resonators.

22. The method according to claim 20, wherein the first resonator and the second resonator are disposed between said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.

23. The method according to claim 20, wherein the first resonator is coupled to the first triple-mode mono-block resonator and the second resonator is coupled to the second triple-mode mono-block resonator, wherein said first triple-mode mono-block resonator and said second triple-mode mono-block resonator are coupled to one another.

24. The method according to claim 20, wherein said at least one block resonator is coupled to at least one of said first triple-mode mono block resonator and said second triple-mode mono-block resonator via an aperture.

25. A radio frequency communication system comprising:
a base station; and

a resonator filter assembly coupled to said base station, wherein the resonator filter assembly comprises:

a first triple-mode mono-block resonator;

a second triple-mode mono-block resonator; and

at least one block resonator coupled to at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.

26. The radio frequency communication system according to claim 25, wherein said at least one block resonator is disposed between said first triple-mode mono-block resonator and said second triple-mode mono-block resonator.

27. The radio frequency communication system according to claim 25, wherein said at least one block resonator comprises a metallic coaxial resonator.

28. The radio frequency communication system according to claim 25, wherein said at least one block resonator is coupled to at least one of said first triple-mode mono-block resonator and said second triple-mode mono-block resonator via an aperture.

29. The radio frequency communication system according to claim 25, wherein said at least one block resonator comprises a first resonator and a second resonator.